

A NEW *FISSIDENS* FROM MICRONESIA

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Tiny species of *Fissidens* are numerous on wetter tropical Pacific islands on shaded rocks or, less often, on roots of trees or soil banks along watercourses. It is from such habitats in the Palau Islands of the far western Pacific that this species was found. The type collection was on soft limestone rock although some other collections were from a clay hardpan exposure.

Of the species known from the lowlands of the archipelagos off the east coast of the Asian mainland, this species may be approached most closely by *Fissidens mittenii* Paris but differs in the heavier collenchymatous cell walls, the absence of somewhat elongated sub-marginal cells near the base of the vaginant lamina, and the insertion, on most leaves, of the distal end of the duplicate blade directly to the costa. The structure of the peristome would seem to place this species in the section *Crispidium* as circumscribed by Shin's (1964) keys. The leaf surface appears to be slightly pusticulate when the dried plants are soaked and mounted in water but specimens cleared in Hoyer's solution have no discernible surface irregularities--which may account for Iwatsuki's (1967) comment that Shin's drawings were inaccurate for that detail in regard to *F. mittenii*.

FISSIDENS DUTTONII sp. nov. (fig. 1-8)

Plantae rupestres, ca. 5.0 X 2.0 mm, *foliis* 6-12 *jugis*. *Folia* ca. 1.2 X 0.3 mm, *acuminata*; *costa* in *apice soluta*, *marginibus ad apicem irregulariter dentibus et ex apice subtiliter denticulatis vel plus minusve integris*. *Laminae duplicatae* ca. 1/3 *folii extensa*, *limbo nullo*. *Cellulae laminae incrassatae, rotundatae, laeves*. *Dioicae*. *Fructus terminalis*, ca. 3 mm *altus*, *peristomio brunneolo, dentibus ca. 250 μ longis et ad apicem dense spiculatis*. *Specimen typicum*: Palau, Babelthup, Ngatpang, elev. 150 ft, leg. H. A. Miller 1975, 29 August 1960 (MU-*typus*; BISH, G, NICH-*isotypus*).

Plants gregarious on soft limestone or clay hardpan on moist, shaded, banks; stems to 5.0 mm tall and 2.0 mm wide with leaves. Dioicous; both archegonia and antheridia borne in clusters in terminal buds. Leaves in 6-12 pairs, including incomplete basal leaves, ca. 1.2 X 0.3 mm, the vaginant lamina extending about 1/3



Fig. 1-8. *Fissidens duttonii*. 1 - 2. Habit of fertile plant, X 17; 3. Calyptra, X 17; 4. Leaf tip, X 270; 5. Upper leaf cells and margin, X 270; 6. Habit of male plant, X 17; 7. Perigonal leaf, X 32; 8. Tip of peristome tooth, X 950.

the length; blade oblong-lanceolate with a strong, nearly percurrent, costa; margin unbordered, minutely denticulate to entire and sometimes with a few larger, irregular teeth near the tip; blade cells rounded-hexagonal, somewhat collenchymatous and incrassate with a conspicuous middle lamella in cleared material; duplicate blade free margin curved and tapering distally into the blade at the costa in most leaves, unbordered with marginal and submarginal cells isodiametric or nearly so; dorsal blade opposite the duplicate blades tapered to the stem just below the costa and somewhat decurrent down the stem; leaf tip acuminate, usually with a few irregular marginal teeth. Sporophyte single, terminal from a clearly delimited vaginula, innovations not seen; seta ca. 2.7 mm long bearing an inclined urnulate capsule with an obliquely beaked operculum. Peristome single, reddish brown, and of 16 teeth, each bifid about $3/4$ and 250 μ long; the basal $1/4$ of each tooth with the outer layer of bars extending the width of the tooth, and with 2-3 irregular rows of closely-spaced verruculae between each bar; the inner layer of the basal $1/4$ with alternating bars extending $1/2$ across the tooth from the sides, the bars lamellate in profile with irregular surface eruptions in the

undivided tooth base; the inner lamellae are coalesced to form chambers in the base of each tooth segment, the chambered portion of each segment extending for about $1/2$ the segment with the chambers becoming progressively longer and less distinct as the segment narrows and bearing angled broken bars of irregular thickness extending upward to about $2/3$ the segment length; distal $1/3$ of each segment is coarsely spiculate-tuberculate, apparently unchambered and pale. Calyptra not seen. Named for Lee S. Dutton, botanical assistant on the Miami University--*Collegiate Rebel* Expedition.

In addition to the type, the following collections were made in the same area: Palau, Babelthuap Island above Ngatpang in forested hills about 150 feet elevation. Collected by H. A. Miller 7948, 7949, 29 August 1960; loc. cit., 400-500 feet, H. A. Miller 8017, 30 August, 1960; loc. cit., 600 feet, Lee S. Dutton 16, 69, 1 September 1960.

Grateful acknowledgement is given the National Science Foundation for Grants G-7115 and GF-176 to Miami University, Oxford, Ohio, in support of studies of Micronesian bryophytes.

Literature Cited

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